

# Technical developments in the application of grouting technology in soils and rock

## Clif Kettle

Principal Engineer at Clif Kettle Consulting

### Seminar overview:

The seminar will chart the range of technical developments over the past 40 years in the application of grouting technology in soils and rock. A very broad spectrum of improving technologies have taken the development of the process from one of field observation and pocketbook recording to a fully engineered process. This technological improvements have taken place in the fields of:

- advances in theoretical design concepts
- evolution of specialist plant and equipment
- development of new and improved injection materials
- improvements and codification of injection and drilling processes
- improvements in control measures, analytical tools and presentation of data and understanding of soil and rock properties
- greater understanding and emphasis on safety from design to construction

The result of all this activity, driven by contractors, equipment and materials manufacturers, and designers, has been to establish robust and quantifiable engineering processes, with wide applications across the tunnelling, construction, and infrastructure industries.

### Biography:

From 2011-2018 he held the position of Group Lead Specialist for grouting technology for the Soletanche Bachy International Group. He served with the Group for a total of 29 years, during which time he had many roles. He has a total of 45 years of specialist geotechnical contracting experience. He has 12 years of site-based working experience overseas, on projects all around the world.

His main areas of specialisation have been grouting for ground improvement in rock and soil, ground anchors, minipiling, instrumentation, control of tunnelling and construction induced settlements. He has had extensive experience of ground treatment for urban infrastructure projects, including Cairo Wastewater Scheme, and he has worked on more than 25 dams world-wide in the roles of technical manager and/or contractual-planning manager. In the fields of settlement control and rock grouting for dams he has played a key role in developing these technologies and processes over a period of 23 years, and he has an established reputation internationally in both these fields. In addition to his specialist technical roles, he has a long experience of contract management and administration, managing his own teams and projects directly, as well as sub-contact teams.

### When and where:

Wednesday, 13 Nov, 19:00  
1 Newnham Terrace, Darwin College

### Queries:

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